

WHAT IS CLAIMED IS:

1. Device for the automatic reading of a plurality of codes by means of a key code comprising:
a plurality of inserts having at least one visible face suitable for carrying distinctive elements, said inserts being combined in a movable manner, so that the distinctive elements applied to at least one visible face of every insert form a plurality of strings,
means for positioning said strings alongside each other in parallel mode so as to align the distinctive elements of several strings according to a direction that is basically transversal with respect to the direction of the strings, the first distinctive elements of each string forming the key code, the second distinctive elements of each string forming a code to be remembered, and so on wherein the N^{th} distinctive element of each string forms the N^{th} code to be remembered, and
means for varying the relative position between at least two strings from the initial configuration, wherein when the key code is formed it is possible to read the other codes on the strings in transversal direction, to a position in which the distinctive elements of at least one string appear misaligned compared to the distinctive elements of the other strings.
2. Device for the automatic reading of a

plurality of codes by means of a key code as described in
claim 1, comprising:

a plurality of drums designed to rotate around an
axis and

said plurality of inserts having visible faces
carrying distinctive elements, said inserts being
connected in a movable manner along the side edge of each
of said drums to form said strings,

wherein said drums can be adjacently positioned in
an axial direction in order to align the distinctive
elements of the plurality of drums.

3. Device for the automatic reading of a
plurality of codes by means of a key code according to
claim 2 wherein said drums comprise at least one axial
pin designed for insertion in a seat formed in one of
said inserts.

4. Device for the automatic reading of a
plurality of codes by means of a key code according to
claim 2, wherein said drums include at least one radial
pin adapted to be inserted in a seat formed in one of
said inserts.

5. Device for the automatic reading of a
plurality of codes by means of a key code according to
claim 3, wherein said at least one axial or radial pin
includes a snap-on locking means to prevent said inserts

from slipping out of position.

6. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein at least one of said inserts is a quadrangular based prism, each of the side faces carrying a distinctive element.

7. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein at least one of said inserts is a cylindrical element whose side wall carries at least one distinctive element.

8. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein at least one of said inserts is a triangular based prism, each one of the side faces carrying a distinctive element.

9. Device for the automatic reading of a plurality of codes by means of a key code according to claims 6 and 8 wherein said drums comprise quadrangular prism inserts alternating with triangular based prism inserts.

10. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein said drums comprise at least one slot adapted to receive an insert.

11. Device for the automatic reading of a plurality of codes by means of a key code according to claim 10, wherein at least one of said slots extends inside the drum in a direction that is substantially parallel to the said axis.

12. Device for the automatic reading of a plurality of codes by means of a key code according to one of claims 10, wherein said inserts are manufactured as a sheet or plate material suitable for insertion in the respective slots.

13. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein at least one of said drums includes at least one lobe.

14. Device for the automatic reading of a plurality of codes by means of a key code according to claim 13, wherein at least one of said drums includes a plurality of lobes.

15. Device for the automatic reading of a plurality of codes by means of a key code according to claim 13 wherein each lobe has at least one slot, adapted to receive an insert.

16. Device for the automatic reading of a plurality of codes by means of a key code according to claim 13, wherein each lobe has two slots, each one

suitable for receiving an insert.

17. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein a rod is provided that is suitable for receiving said drums positioned adjacently in an axial direction, said drums possessing a through seat to receive said rod.

18. Device for the automatic reading of a plurality of codes by means of a key code according to claim 17, wherein said rod comprises a first stop fixedly attached to one end of the rod itself.

19. Device for the automatic reading of a plurality of codes by means of a key code according to claim 18, wherein said first stop has a radial extension equal to the radial extension of the drums.

20. Device for the automatic reading of a plurality of codes by means of a key code according to claim 18, wherein said rod comprises a second stop that can be inserted onto the opposite end of the rod from said first stop and is adapted to be fixed to the rod itself.

21. Device for the automatic reading of a plurality of codes by means of a key code according to claim 20, wherein a locking member is provided to prevent said drums and said second stop from slipping from their

position.

22. Device for the automatic reading of a plurality of codes by means of a key code according to claim 20, wherein said second stop comprises flexible fins designed to be attached to one end of the rod.

23. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein stepwise rotation means are provided to rotate each drum by a pre-determined angle.

24. Device for the automatic reading of a plurality of codes by means of a key code according to claim 23, wherein said drums comprise a hollow cylindrical seat co-axial with said longitudinal axis and a side wall with at least one axial groove adapted to interact with axial ribs or blades formed on a portion of the adjacent drum.

25. Device for the automatic reading of a plurality of codes by means of a key code according to claim 23, wherein said drums include a hollow cylindrical seat that is coaxial with said longitudinal axis, and including a side wall with at least one knurled axial portion adapted to interact with axial ribs or blades on a portion of the adjacent drum.

26. Device for the automatic reading of a plurality of codes by means of a key code according to

claim 23, wherein said drums include a hollow cylindrical seat that is co-axial with said longitudinal axis and including a side wall with at least one axial groove adapted to interact with axial ribs on a rod.

27. Device for the automatic reading of a plurality of codes by means of a key code according to claim 23, wherein said stepwise rotation means comprise a specially shaped shaft on which said drums are mounted, said shaped shaft comprising at least one tooth suitable for insertion between two grooves in a through seat formed in at least one of the said drums.

28. Device for the automatic reading of a plurality of codes by means of a key code according to claim 27, wherein said specially shaped shaft is manufactured from a resiliently conformable material that is flexibly movable during the rotation of drums around said axis.

29. Device for the automatic reading of a plurality of codes by means of a key code according to claim 27, wherein said specially shaped shaft includes a first portion consisting of a complete wall and a second portion provided with incisions that form at least two axial sectors.

30. Device for the automatic reading of a plurality of codes by means of a key code according to

claim 27, wherein said specially shaped shaft comprises a first portion consisting of a complete wall and a second portion with incisions that form a series in sequence of axial sectors.

31. Device for the automatic reading of a plurality of codes by means of a key code according to claim 29, wherein at least one of the said axial sectors comprises said at least one tooth.

32. Device for the automatic reading of a plurality of codes by means of a key code according to claim 29, wherein at least a first axial sector has an essentially semi-cylindrical shape as an extension of the first portion.

33. Device for the automatic reading of a plurality of codes by means of a key code according to claim 32, wherein at least a second axial sector has an essentially semi-cylindrical shape with a radius slightly smaller than at least one said first axial sector.

34. Device for the automatic reading of a plurality of codes by means of a key code according to claim 33, wherein said at least one second axial sector includes said at least one tooth that extends radially further beside the radial dimension of said at least one first axial sector.

35. Device for the automatic reading of a

plurality of codes by means of a key code according to claim 27, wherein said specially shaped shaft is hollow and has a seat that is co-axial with said axis.

36. Device for the automatic reading of a plurality of codes by means of a key code according to claim 35, wherein said specially shaped hollow shaft is adapted to house a rod.

37. Device for the automatic reading of a plurality of codes by means of a key code according to claim 36, wherein said specially shaped shaft includes a baffle plate provided at a determined axial position within the seat of the specially shaped shaft and provided with a hole with a radial extension adapted to house the rod.

38. Device for the automatic reading of a plurality of codes by means of a key code according to claim 36, wherein said specially shaped shaft includes two slots that extend in the axial direction and are suitable for receiving fins attached to the rod.

39. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein washers are provided for insertion between two adjacent drums.

40. Device for the automatic reading of a plurality of codes by means of a key code according to

claim 1 wherein at least one of said inserts carries pre-printed distinctive elements.

41. Device for the automatic reading of a plurality of codes by means of a key code according to claim 1, wherein at least one of said inserts has at least one visible face suitable for writing or engraving said distinctive elements.

42. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein at least one of said inserts includes a tessera that is fixed to the respective drum in a direction perpendicular to the rotation axis.

43. Device for the automatic reading of a plurality of codes by means of a key code according to claim 42, wherein said at least one insert is fixed to the respective drum through a snap-on locking system, to prevent the elements from sliding from their position.

44. Device for the automatic reading of a plurality of codes by means of a key code according to claim 1, wherein said inserts are manufactured in the form of sections on a display adapted to be aligned or misaligned in relation to one another.

45. Device for the automatic reading of a plurality of codes by means of a key code according to claim 2, wherein at least two units are provided, which

are adjacent to one another and include a plurality of drums having lobes or teeth, the lobes of one unit meshing with the lobes of the adjacent units.

46. Device for the automatic reading of a plurality of codes by means of a key code according to claim 45, wherein locking means are operatively associated to the ends of the units to maintain them in the radial direction position.

47. Device for the automatic reading of a plurality of codes by means of a key code according to claim 4, wherein said at least one axial or radial pin includes a snap-on locking means to prevent said inserts from slipping out of position.

48. Device for the automatic reading of a plurality of codes by means of a key code according to one of claims 11, wherein said inserts are manufactured as a sheet or plate material suitable for insertion in the respective slots.

49. Device for the automatic reading of a plurality of codes by means of a key code according to claim 14 wherein each lobe has at least one slot, adapted to receive an insert.

50. Device for the automatic reading of a plurality of codes by means of a key code according to claim 14, wherein each lobe has two slots, each one

suitable for receiving an insert.

51. Device for the automatic reading of a plurality of codes by means of a key code according to claim 19, wherein said rod comprises a second stop that can be inserted onto the opposite end of the rod from said first stop and is adapted to be fixed to the rod itself.

52. Device for the automatic reading of a plurality of codes by means of a key code according to claim 28, wherein said specially shaped shaft includes a first portion consisting of a complete wall and a second portion provided with incisions that form at least two axial sectors.

53. Device for the automatic reading of a plurality of codes by means of a key code according to claim 28, wherein said specially shaped shaft comprises a first portion consisting of a complete wall and a second portion with incisions that form a series in sequence of axial sectors.

54. Device for the automatic reading of a plurality of codes by means of a key code according to claim 30, wherein at least one of the said axial sectors comprises said at least one tooth.

55. Device for the automatic reading of a plurality of codes by means of a key code according to

claim 37, wherein said specially shaped shaft includes two slots that extend in the axial direction and are suitable for receiving fins attached to the rod.